CLAIMS

1. A method for producing a glass body provided with a glass membrane for a chemical sensor, comprising:

inserting a dip tube reproducibly, with respect to a position of its lower end, into a mount joined to a displaceably supported carriage;

displacing the carriage as far as a lower end position (P1); and

dipping the dip tube into a mass of molten glass as the carriage is moved downward and upon retraction of the carriage pulling the dip tube out of the molten glass to withdraw a gob that can be placed into a desired shape by supply of a gaseous medium, the lower end position being defined, for dipping at least one subsequent dip tube, by means of an adjustment device and/or a control device based on a previously ascertained suitability of the gob for processing.

2. The method of claim 1, wherein after at least one withdrawal of a gob, the lower end position (P1) is readjusted manually or automatically by a certain amount by means of the adjustment device and/or the control device, to compensate for a change in level of the molten glass that has been caused by the withdrawal of gobs.

3. The method of claim 1, wherein the carriage is fixed in an upper end position (P2), in which the dip tube to be processed is inserted and a completed glass body is withdrawn, and wherein for positioning the dip tube:

a) either a reference element, which indicates a desired position of a portion of the dip tube to be dipped into the molten glass, is extended; or

b) the dip tube, optionally introduced into the mount by means of a robot arm, is photographed by means of a camera, and corresponding image data

b1) and reference data are displayed on an image output unit; or

b2) are compared in the control device with set- point values to position the dip tube correctly by means of the robot arm.

4. The method of claim 1, wherein after a positioning of the dip tube, a heater is guided toward a portion of the dip tube to be dipped in the molten glass, which heats the dip tube for a determinable or predetermined length of time.

5. The method of claim 4, wherein the mount is rotated during the heating of the dip tube in an upper end position (P2), or after the withdrawal and/or during shaping of the gob.

6. The method of claim 1, wherein an extensible and retractable cover element is provided, which is guided to a location above the molten glass and is retracted again, using signals output by sensors, whenever the carriage is guided to the lower end position (P1).

7. The method of one of claim 1, wherein supply of the gaseous medium is controlled by the control device as a function of a blowing pressure curve and/or as a function of image data, acquired by means of a camera, that are compared with set- point data.

8. The method of claim 1, wherein a pressure of the gaseous medium is monitored during shaping of the gob, and when a pressure drop occurs, a control signal is output by means of which an error is recorded.

9. The method of claim 1, wherein after withdrawal of a gob, the dip tube is rotated out of a vertical position, by approximately 135°.

10. An apparatus for producing a glass body provided with a glass membrane for a chemical sensor, comprising:

a mount provided on a displaceably supported carriage, by means of which mount a dip tube through which a gaseous medium can flow can be dipped into a mass of molten glass and retracted again to withdraw a gob which is subsequently put into a desired shape by supply of the gaseous medium;

means for reproducibly positioning the dip tube in the mount with respect to its lower end and for monitoring the positioning; and

an adjustment device and/or a control device, by means of which a lower end position (P1) for the carriage can be adjusted, in which position the dip tube, when the carriage is moved downward, dips into the molten glass and upon retraction of the carriage withdraws a gob suitable for processing.

11. The apparatus of claim 10, wherein the adjustment device includes a lower limiting element, which is stationary or can be fixed in stationary fashion in a selectable end position, and a distance adjustment device, joined to the lower limiting element or to the carriage, by means of which spacing between the lower limiting element and the carriage moved

toward the lower limiting element, and thus the lower end position (P1), are adjustable.

12. The apparatus of claim 10, wherein after at least one withdrawal of a gob, the lower end position (P1) is readjusted by a certain amount,

a) manually by means of actuation of the adjustment device; or

b) automatically by means of the control device, by control of the adjustment device or of a drive motor connected to the carriage, to compensate for a change in level of the molten glass that has been caused by withdrawal of gobs.

13. The apparatus of claim 10, comprising:

a) an upper limiting element that is stationary or can be fixed in stationary fashion, toward which the carriage is pulled by means of a tension element, into an upper end position (P2) and held stably, in which position the dip tube to be processed can be inserted and a completed glass body can be withdrawn, or

b) an upper end position (P2) defined by means of at least one position sensor and the control device, by which the carriage provided with the drive motor is displaceable between the upper and lower end positions (P1, P2).

14. The apparatus of claim 10, comprising:

a) an extensible and retractable reference element, which after being extended indicates a set- point position of a part of the dip tube to be dipped into the molten glass, so that this tube or part is suitably positionable; or

b) the dip tube, optionally introduced into the mount by means of a robot arm, photographed by means of a camera, and

b1) corresponding image data and a reference datum are displayed on an image output unit to position the dip tube manually; or

b2) corresponding image data are compared in the control device with set-point values to position the dip tube correctly by means of the robot arm.

15. The apparatus of claim 10, comprising:

a heater that can be extended and retracted, and which, optionally controlled by the control unit, can be guided toward a part of the dip tube to be dipped into the molten glass and which heats this part for a determinable or predetermined length of time.

16. The apparatus of claim 15, comprising:

a drive unit, which by means of a drive shaft oriented coaxially with a longitudinal axis of an inserted dip tube, is joined to the mount and can be controlled such that the mount is rotatable in an upper end position (P2) during heating of the dip tube, or after the withdrawal and/or during shaping of the gob.

17. The apparatus of claim 16, wherein the drive shaft is provided with an internal conduit and openings, through which the gaseous medium can be introduced into the dip tube.

18. The apparatus of claim 17, wherein supply of the gaseous medium can be controlled by the control device as a function of a blowing

pressure curve and/or as a function of image data, taken by means of a camera, which are compared with set-point data.

19. The apparatus of claim 18, wherein the pressure of a gaseous medium supplied by a pump device can be monitored during shaping of the gob, and when a pressure drop occurs a control signal can be output by means of which an error can be recorded.

20. The apparatus of claim 10, comprising:

an extensible and retractable cover element, which is guided to a location above the molten glass and is retracted again as a function of signals output by sensors, whenever the carriage is guided to the lower end position (P1).

21. The apparatus of claim 10, comprising:

sensors and/or switches with which a drive unit, a drive motor connected to the carriage, and/or drive units can be controlled, with which units and/or motor a reference element, a heater and/or cover element for the molten glass can be extended and retracted.